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VIA CERTIFIED MAIL!



December 03, 2001

NHTSA-2002-11398-2

Dr. Jeffrey W. Runge, Administrator
National Highway Traffic Safety Administration
400 Seventh Street SW
Washington DC 20590

Re: A Petition for Rulemaking to Amend the Labeling Requirements of FMVSS 213 – Child Restraint Systems, to Accommodate Air Bag Resistant Infant Restraint Systems, and to Add a Corresponding Test Procedure.

Dear Dr. Runge:

Xportation Safety Concepts, Incorporated, (hereinafter XScI), has begun the manufacture of a rearward-facing infant child restraint which has been designed to shield and protect the occupant from the force of a deploying air bag. The requirement of S5.5(k)(1) of FMVSS 213 for a label and warning against placing the restraint in the front seat of a vehicle that has a passenger side air bag is not appropriate or necessary for this system. We ask that NHTSA proceed with rulemaking to allow manufacturers of infant restraints that meet certain test criteria discussed in detail in the Attachment to omit the label and warning.

As we indicated in our letter of October 1, 2001, submitted in accord with the requirements of 49 CFR Part 566 – Manufacturer Identification, the PioneerTM Rear-facing Infant Seat has been tested and designed with the front seat in mind, in that it may be used in the front seat of vehicles equipped with a passenger air bag. The removable infant carrier, when locked into its support tray, is isolated from the outer plastic canopy of the device by elastomeric shock mounts. The outer canopy is designed to absorb, in part, and to redirect the force of a deploying air bag into the vehicle seat, such that the infant's headrest in the isolated carrier is never subjected to that force.

In addition to tests to assure its performance with respect FMVSS 213, the Rear-facing Infant Seat has been subjected to static air bag deployments and vehicle crash simulations using minivan and sedan bucks and the CRABI 6-Month-Old and 12-Month Dummies. In the latter tests, the dummy injury criteria were measured against those developed as part of the CRABI Task Force activity and published in Reference 2 of the Attachment. We would be pleased to share the results of those tests with the agency. We would also readily supply production samples of the Rear-facing Infant Seat to NHTSA for testing in the system described in the Attachment.

We are aware that the use of our product in front seating positions equipped with air bags is not in keeping with the agency's recommendations regarding rear-facing child restraint use. We are ready to discuss this issue with the agency at any time. Please address any requests for information to Howard S. Willson at 734 761-8632, or in writing, to our office.

Sincerely,

E. Patricia Goor

E. Patricia Goor,
President and Chief Executive Officer

Attachment

Xportation Safety Concepts, Incorporated
December 03, 2001

A Petition for Rulemaking to Amend the Labeling Requirements of FMVSS 213 – Child Restraint Systems, to Accommodate Air Bag Resistant Infant Restraint Systems, and to Add a Corresponding Test Procedure.

In the preamble to the final rule (Docket No. 74-09; Notice 34) that created the label requirement, the agency noted at 59 FR 7646 that:

Several commenters, however, expressed concern that the requirements adopted today might impede the development of rear-facing infant restraints that are safe to use in an air bag equipped seating position. These commenters indicated that manufacturers are undertaking efforts to develop infant restraints that can be used in an air bag-equipped seating position.

NHTSA does not intend for this rule to impede the development of rear-facing restraints that are compatible with air bags. As discussed in the NPRM, the agency has been closely monitoring the work of a task force on Child Restraint and Air Bag Interaction (CRABI) formed by the Society of Automotive Engineers. The task force is comprised of motor vehicle and child seat manufacturers and highway safety researchers. It has developed guidelines consisting of test procedures and test configurations (e.g., test dummies and a test fixture) that can be used for evaluating the interaction between child restraints and air bags....If CRABI were to develop a test procedure from its guidelines, NHTSA would evaluate it to determine whether the procedure is appropriate for Standard 213. Among other things, the procedure would have to be suitable for testing all types of infant restraints, and be able to provide test results that assess the performance of the restraint in the real world. The agency will consider a test procedure for incorporation into Standard 213 as soon as a suitable one is developed.

The task force completed the aforementioned guidelines, which were published by the Society of Automotive Engineers as a Surface Vehicle Information Report (Reference 1). Section 7 of the document discusses dynamic test procedures, and Section 10 describes the test fixture. The seating portion of the fixture resembles that of the FMVSS 213 test fixture, and it is likely that its features could be incorporated into that fixture.

At the request of the CRABI Task Force, the SAE Infant Dummy Task Force developed specifications for the 6 Month Old and 12 Month Old CRABI Dummies, and they are now readily available (Reference 2). Further, a member of the CRABI Task Force has developed the appropriate injury assessment values for the 6 Month Old Dummy (Reference 3).

NHTSA, in its early efforts to determine the interaction of child restraints and passenger air bags, conducted a number of impact simulations using a HYGE sled. The study was reported in Reference 4. In the report, it is noted that the test buck is similar to the buck design in the CRABI Task Force Information Report, and that it used the Standard.213 seat. The report further notes that the Standard 213 seat was modified to have the same seat cushion and seat back attitudes as the seat in the CRABI buck.

We submit that there are now a test procedure, a test buck, dummies, and injury assessment values, all of the elements necessary to allow the agency to proceed with rulemaking to accommodate air bag resistant, rear-facing infant restraints. The rulemaking will, of course, include the incorporation of the CRABI dummies into 49 CFR Part 572.

Reference 1:

**Society of Automotive Engineers, CRABI Task Force.
Guidelines For Evaluating Child Restraint Interactions With Deploying Airbags,
J2189 SAE, Warrendale, PA, March 1993**

Reference 2:

**FTSS Product Catalog: CRABI 6 Month Old Infant Dummy 910420-000; 12
Month Old Child Dummy 921022-000
First Technology Safety Systems, Plymouth, MI 48170**

Reference 3:

**Melvin, J. W. Injury Assessment Values for the CRABI 6-Month Infant Dummy in
a Rear-Facing Infant Restraint With Airbag Deployment. SAE 950872. Society
of Automotive Engineers, Warrendale, PA, 1995**

Reference 4:

**Sullivan, L. K. 1992 Child Restraint/Passenger Air Bag Interaction Analysis.
Final Report. National Highway Traffic Safety Administration, Vehicle Research
and Test Center, East Liberty, Ohio. 111 p. Report No. DQT/HS 808 004**